NOTICE

All drawings located at the end of the document.

TECHNICAL MEMORANDUM 2

RESPONSES TO AUGUST 1, 1991 EPA COMMENTS ON THE OPERABLE UNIT NO. 1 RFI/RI WORK PLAN

ROCKY FLATS PLANT
ENVIRONMENTAL RESTORATION PROGRAM

U.S. Department of Energy
Rocky Flats Office
Golden, Colorado

20 August 1991

TECHNICAL MEMORANDUM 2

RESPONSES TO AUGUST 1, 1991 EPA COMMENTS ON THE OPERABLE UNIT NO. 1 RFI/RI WORK PLAN

This Technical Memorandum presents DOE's response to the August 1, 1991 EPA comments on the Revised Phase III RFI/RI Work Plan for Operable Unit No. 1 (OU No. 1), 881 Hillside Area. The scope of this response is limited to the key EPA concerns identified in the cover letter to the comments. These concerns are as follows:

1) Soil scrape sampling should extend into Individual Hazardous Substance Site (IHSS) 130.

2) Contaminant particle size must be evaluated for the risk assessments.

3) Sampling must be conducted to characterize Non-Aqueous Phase Liquids (NAPLs) if present.

4) Adequate air monitoring must be in place for a complete evaluation of the air pathway in the risk assessment and environmental evaluation.

5) ARARs are to be evaluated as presented in the specific comments on Section 7 of the Work Plan.

6) Controls against laboratory contamination must be in place and previous data showing elevated concentrations of potential laboratory contaminants must be verified. Contamination not attributable to laboratory contamination must be considered as contamination from a waste source.

DOE has reviewed EPA's specific comments on the Work Plan and will address these comments in the RFI/RI Report. Each of the key concerns is subsequently discussed.

COMMENT:

1) Soil scrape sampling should extend into Individual Hazardous Substance Site (IHSS) 130.

RESPONSE:

Soil sampling to characterize the distribution of plutonium and americium in surficial soils will be conducted by collecting surface scrapes from 125 sectors identified in Figure 5-3 (Attached). Sectors 1 and 3 border IHSS 130 to the south and east, respectively. In order to characterize plutonium and americium in surficial soils at the IHSS, a soil scrape was taken from the location marked "O" on Figure 5-3. The sampling for spatial distribution of the actinides in the surficial soils in the OU No. 1 study area was completed on 12 August 1991.

COMMENT:

2) *Contaminant particle size must be evaluated for the risk assessments.*

RESPONSE:

A particle size distribution analysis will be performed at 3 locations in OU No. 1 identified for profiling the vertical distribution of plutonium, americium, and uranium. This geotechnical test will be performed on samples from all vertical intervals. In addition, the concentrations of actinides within the sand, silt, and clay fractions will be analyzed for particular samples from these intervals including the top 3 centimeters.

COMMENT:

3) *Sampling must be conducted to characterize Non-Aqueous Phase Liquids (NAPLs) if present.*

RESPONSE:

Sampling will be performed on select wells within IHSS's 119.1, 119.2, and 105 to determine the presence of LNAPLs or DNAPLs, and if present, to chemically characterize the liquids. For example, the high concentrations of contaminants at well 9-74 within IHSS 119.1 suggest a potential for NAPLs, most likely DNAPLs as the chlorinated solvents have a specific gravity exceeding 1.0. Specially designed bailers will be used for sampling NAPLs. It should be noted, however, that previous EPA comments to the work plan make no reference to the need for specialized sampling for NAPLs.

COMMENT:

4) *Adequate air monitoring must be in place for a complete evaluation of the air pathway in the risk assessment and environmental evaluation.*

RESPONSE:

Based on the specific EPA comments, the concern over adequate air monitoring stems from a vagueness in the work plan on how the nature and extent of contamination via the air pathway will be analyzed. EPA also suggests the need for site specific air monitoring.

The contaminants of concern with respect to the air pathway are plutonium, americium, and uranium. These contaminants are toxic, present in surficial soils, and thus amenable to transport via the air pathway. The surficial soil sampling program will provide data on the distribution of plutonium, americium, and uranium in surface soils that has arisen from wind dissemination of contaminated dust. The Radioactive Ambient Air Monitoring Program (RAAMP) continuously monitors the ambient air within the Rocky Flats Plant property, and many locations in the surrounding environs. There are 51 high volume samplers within the RAAMP. Four of these samplers are located in the 881 Hillside Area (S-81A, S-81B, S-81C, and S-81D). Filters from these four high volume samplers are collected every 2 weeks, and composited for a monthly analysis for plutonium 238 and 239. Filters from the remaining samplers are collected and analyzed monthly for plutonium. Continuous meteorological monitoring is also performed to assess dust resuspension potential and provide supporting data for health and safety programs. There are proposed plans for the addition of uranium and americium to the RAAMP. Results from the soil and air sampling programs will provide for a complete evaluation of the air pathway in the risk assessment and environmental evaluation.

COMMENT:

5) *ARARs are to be evaluated as presented in the specific comments on Section 7.*

RESPONSE:

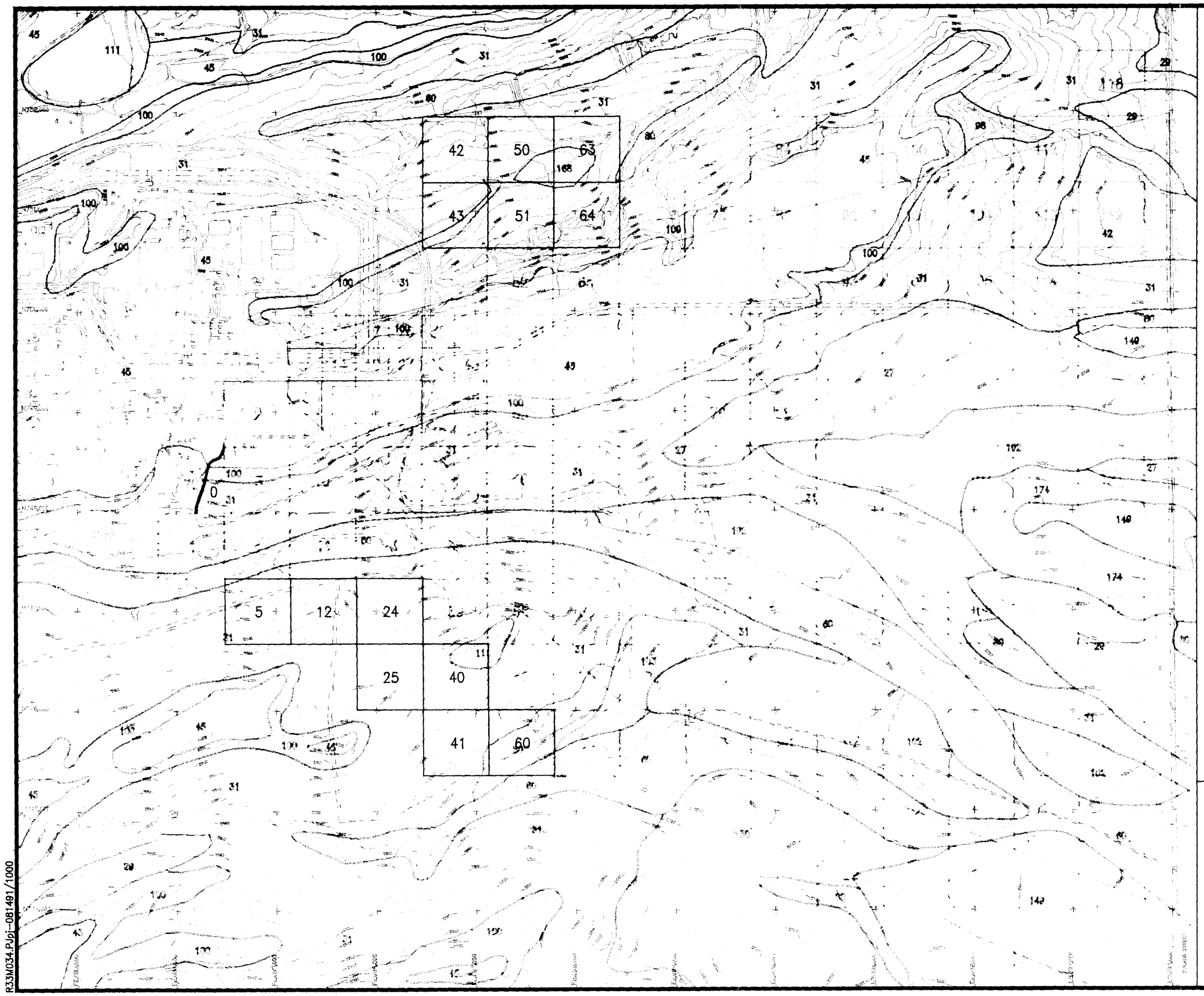
We have reviewed the EPA comments pertaining to ARARs. As suggested by EPA, the comments will be reflected in the RFI/RI report. Although DOE will address these comments in the RFI/RI report, it will be necessary to discuss these comments to resolve conceptual differences in advance of issuing the report.

COMMENT:

6) *Controls against laboratory contamination must be in place and previous data showing elevated concentrations of potential laboratory contaminants must be verified. Contamination not attributable to laboratory contamination must be considered as contamination from a waste source.*

RESPONSE:

DOE is addressing both lab and field introduced contamination of samples collected during the field investigation. The laboratories that will be used for chemical analysis have a proven track record of minimizing lab-introduced contamination of the samples, and otherwise conform to the high QA/QC standards specified in the QAPjP. Field introduced contamination will also be minimized through strict adherence to the SOPs, and the potential for field introduced contamination will be assessed through the collection of trip and rinseate blanks. With respect to phthalates in soils, sampling technique modifications and new QC protocols are being developed to minimize any field introduced contamination, and to determine if phthalate contamination originates from sample handling and packaging. DOE agrees that the presence of contaminants in samples that cannot be attributable to laboratory contamination must be considered as originating from the waste sources under investigation.



EXPLANATION

ESTIMATED MAXIMUM EXTENT OF SURFICIAL SOILS CONTAINING TWO dpm/g ACTIVITY BY CDH PROTOCOL

10 ACRE SAMPLING PLOT LOCATIONS

25 — 10 ACRE SAMPLING PLOT LOCATIONS NORTH AND SOUTH OF OPERABLE UNIT 2

2.5 ACRE SAMPLING PLOT LOCATIONS

0 — ADDITIONAL SAMPLING PLOT FOR OPERABLE UNIT 1 – IHSS 130

98 — SOIL TYPE BOUNDARY AND NUMBER

SOURCE: U.S. DEPARTMENT OF AGRICULTURE, 1980

SOIL TYPE NUMBER	SERIES
27	DENVER
29	DENVER–KUTCH
31	DENVER–KUTCH–MIDWAY
42	ENGLEWOOD
45	FLATIRONS
60	HAVERSON
80	LEYDEN–PRIMEN–STANDLEY
98	MIDWAY
100	NEDERLAND
102	NUNN
103	NUNN
149	STANDLEY–NUNN
174	WILLOWMAN–LEYDEN

N

1" = 1000'

0' 500' 1000'

CONTOUR INTERVAL = 20'

U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado

OPERABLE UNIT NO. 1
PHASE III RFI/RI WORK PLAN

PROPOSED SURFICIAL SOIL SAMPLING PLOT IDENTIFICATION NUMBERS

FIGURE 5-3

August, 1991

R33M034.PJpj–081491/1000